CAESAREAN SECTION – OPERATIVE CLOSURE GUIDELINE

1. OPTIMAL OUTCOMES
   • Appropriate use of material and technique for closure at caesarean section (LSCS)

2. PATIENT
   • All patients undergoing caesarean section

3. STAFF
   • Medical officers performing caesarean section
   • Theatre nursing staff

4. EQUIPMENT
   • Appropriate suture materials as outlined below

5. CLINICAL PRACTICE
   a) One versus two-layer closure of the uterus
      • The effectiveness and safety of a single layer closure is uncertain
      • A two layer closure should be used, based on a single cohort study demonstrating an increased likelihood of scar rupture after single layer closure (OR 3.95 CI 1.35-11.49)
   b) Closure of the peritoneum
      • The visceral peritoneum need not be sutured at LSCS
      • Non-suturing of parietal peritoneum results in reduced operating time, the need for post-operative analgesia and improves maternal satisfaction (2)
      • Closure of the peritoneum results in increased adhesion formation in general surgical and gynaecological patients
      • Non-closure of the parietal peritoneum may result in increased adhesion formation after LSCS (9)
      • Closure of the parietal peritoneum is at the discretion of the surgeon
   c) Closure of the rectus sheath
      • If a midline incision is used less dehiscence and fewer incisional hernias result from mass closure with a slowly absorbable continuous suture
      • If a Pfannenstiel incision is used a single layer closure with a slowly absorbable suture should be used
   d) Closure of subcutaneous tissue
      • Closure of the subcutaneous fat may reduce wound complications however the data is limited and there is no long term data reported
      • Routine closure of subcutaneous tissue space in women with <2cm subcutaneous fat may be left to the discretion of the surgeon as closure has not been shown to decrease wound infection
      • Closure of the subcutaneous tissue space in women with >2cm adipose tissue reduces the rate of post-operative wound disruption (1, 4, 5)
   e) Closure of the skin
      • The effects of different suture materials or methods of skin closure at LSCS are uncertain

6. HAZARDS/SUB-OPTIMAL OUTCOMES
   • Wound complications
   • Staff sharps injury

cont’d ..../2
7. DOCUMENTATION

- Suturing materials and technique should be noted in the operation report and filed in the woman’s hospital record

8. EDUCATIONAL NOTES

- Occupational health and safety as proposed by Dept of Health (7, 8)
  - The use of sharps should be minimised where possible
  - There must be safe handling of sharps
  - Hand held straight needles should not be used
  - Blunt needles should be used to close the abdomen
  - Whenever possible, the skin should be closed with staples following a surgical procedure

- The U.K. based CAESAR trial is investigating the question of one versus two layer uterine closure, peritoneal closure versus non-closure and restricted versus liberal use of the sub-sheath drain

- Long term studies following caesarean section are limited however data from other surgical procedures supports non-closure of the peritoneum

- One small randomised control trial (RCT) showed no increase in the number of patients with wound dehiscence or post-operative complications at 2-5 yrs when comparing closure with non-closure of the peritoneum

- Four RCT’s have randomised women to closure versus non-closure of the subcutaneous tissue space. One trial found no difference, one found less dehiscence with closure however the quality of the trial is questionable, two found less complications in the closure group however only randomised women with >2cm subcutaneous fat. (4, 5)

- The use of superficial wound drains does not decrease wound infection or haematoma

- One small RCT (66 women) only, has looked at skin closure using staples versus absorbable sub-cuticular suture and found less post-operative pain and better cosmetic result with the subcuticular suture and significantly shorter operating time with staples (6)

9. RELATED POLICIES/ PROCEDURES

10. REFERENCES

1. NICE Clinical Guideline
   National Collaborating Centre for Women’s and Children’s Health
   April 2004 RCOG Press p67-69
2. Peritoneal Closure RCOG Guideline No 15 July 2002
6. Alderice, F et al Techniques and material for skin closure in caesarean section, The Cochrane Database of Systematic Reviews last updated 23/6/2004